

AMENDMENTS TO THE DRAWINGS

“Replacement Sheet” are attached which include a clean version of amended Figs. 1, 2, 3A and 3B. The attached sheets replace the original sheets including Figs. 1, 2, 3A and 3B.

Figs. 1, 2, 3A and 3B were amended to include the legend “Prior Art”.

REMARKS

In response to the Office Action mailed July 7, 2009, Applicant respectfully requests reconsideration. Claims 1-4 and 6-20 were previously pending in this application. By this amendment, claims 1, 4, 6, 7 and 9 have been amended. No claims have been added or canceled. As a result, claims 1-4 and 6-20 remain pending for examination with claims 1, 4, and 9 being independent. No new matter has been added.

Discussion of Some Embodiments

Before discussing the Office Action, Applicant provides a brief discussion of some embodiments to assist the Examiner in appreciating various aspects of the present invention.

The IEEE-ISTO-5001 standard provides an on-chip interface which may be used for debugging and testing a microprocessor (pg. 2, lines 9-13). Messages are sent from an on-chip monitoring tool to an analysis tool which analyzes the operation of the microprocessor (pg. 1, lines 14-16). Each message sent from the monitoring tool contains a sequence of one or more packets of variable size (pg. 2, lines 23-24). For transmission, each packet in a message is divided into segments of fixed size (pg. 2, lines 30-32). Unused bits in the last segment are padded to the fixed size with a predetermined value (pg. 3, lines 3-5). Also sent with each transmitted segment is an indication of a segment type (pg. 3, lines 10-14). For example, the first segment of the first packet in a message may be classified as a message start segment (pg. 3, line 12; FIG. 3A, ref. no. 311; FIG. 3B, ref. no. 311'). The last segment of the last packet in a message may be classified as a message end segment (pg. 3, line 13; FIG. 3A, ref. no. 332; FIG. 3B, ref. no. 331'). Similarly, a segment which contains the last bits of a packet, but not the last segment of a message may be classified as a packet end segment (pg. 3, line 12; FIG. 3A, ref. nos. 312, 323; FIG. 3B, ref. nos. 312', 322').

Applicant has recognized and appreciated that when a first packet of a message having several packets has a size smaller than or equal to the segment size, the first packet should, according to the IEEE-ISTO-5001 standard, be transmitted in two segments. The transmission of the second segment contains no data and uselessly monopolizes the test terminals reducing the transmission bandwidth (pg. 8, lines 3-7; see FIG. 3B). Some embodiments are directed to a modification of the IEEE-ISTO-5001 standard that enables a segment containing data to be transmitted immediately after a segment containing both the start of a message and the end of a

first packet among several packets in the message (pg. 8, lines 3-12). According to some embodiments, segments containing both the start of a message and the end of the first packet (of multiple packets) in the message are classified as a packet end segment rather than as a message start segment as in the IEEE-ISTO-5001 standard (pg. 8, lines 18-26). According to some embodiments, segments containing both the start of a message and the end of the message are classified as a message end segment rather than as a message start segment as in the IEEE-ISTO-5001 standard (pg. 8, lines 27-30; pg. 9, lines 3-5). This later case may occur, for example, when a message is shorter than the fixed segment length (pg. 8, lines 30-31). The above modifications may eliminate the problem recognized by Applicant, improving the systems transmission bandwidth (pg. 9, lines 27-29).

It should be appreciated that the foregoing discussion of embodiments of the invention is provided merely to assist the Examiner in appreciating various aspects of the present invention. However, not all of the description provided above necessarily applies to each of the independent claims pending in the application. Therefore, the Examiner is requested to not rely upon the foregoing summary in interpreting any of the claims or in determining whether they patentably distinguish over the prior art of record, but rather is requested to rely only upon the language of the claims themselves and the arguments specifically related thereto provided below.

Objections to the Drawings

The Office Action objected to Figs. 1, 2, 3A and 3B of the drawings stating that they should be designated by a legend such as prior art because only that which is old is illustrated. Corrected drawings were required. Accordingly, Applicant submits herewith three sheets of replacement drawings wherein Figs. 1, 2, 3A and 3B have been designated "Prior Art" as suggested in the Office Action.

The Office Action also stated that the drawings must show every feature of the invention specified in the claims. Specifically, the Office Action asserts that each of the "means" recited in claim 4 are not illustrated in the drawings. Applicant respectfully disagrees. FIG. 1 shows a system comprising an integrated circuit 10 with a microprocessor 12 and monitoring circuit 18, an analysis tool 24, and a number of test terminals 22 providing a transmission medium between monitoring circuit 18 and analysis tool 24. Applicant acknowledges that the system topology illustrated in FIG. 1 was known in the prior art. However, the specification makes clear that the

same system topology may be used to implement the means recited in claim 4 (pg. 9, lines 15-18).

Therefore, the “means for dividing each data packet of a digital message into successive segments of same predetermined size” is illustrated, for example, by monitoring circuit 18 in FIG. 1 (pg. 2, lines 14-16, lines 30-33). The “means for sending at the same time as each segment of the successive segments, an identification signal characterizing the type difference between the considered segment and the previous segment” is illustrated, for example, by monitoring circuit 18 and test terminals 22 in FIG. 1 (pg. 2, lines 13-16; pg. 3, lines 6-7). The “means for reconstituting the packets of the digital message by arranging end to end the successive segments containing data of a same packet” is illustrated, for example, by analysis tool 24 in FIG. 1 (pg. 4, lines 13-15).

Additionally, the Office Action states that “the application appears to be claiming in claim 4 a prior art analysis tool 24 of the integrated circuit 10 device of Fig. 1 as the “means for reconstituting the packets of the digital message” and where the analysis tool 24 is located outside the integrated circuit 10 (located outside the device) in FIG. 1. Claim 4 has been amended to refer to a system.

Accordingly, withdrawal of this objection is respectfully requested.

Rejections Under 35 U.S.C. §101

Claims 1-3 and 8 stand rejected under 35 U.S.C. §101 as not falling within one of the four statutory categories of invention.

Claim 1 is amended to recite “sending, by the monitoring circuit...” and “reconstituting, by the analysis tool...” such that the method is positively tied to a particular machine and therefore statutory under 35 U.S.C. §101. Claims 2, 3 and 8 depend from claim 1 and the rejection of these claims under 35 U.S.C. §101 should be withdrawn based at least on their dependency.

Rejections under 35 U.S.C. §112

Claims 1-4 and 6-8 stand rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention.

Claim 1 recites five types of segments. Each segment type is recited with a characteristic, but the claim does not require all segments having the characteristic be classified as that segment type. For example, claim 1 recites “a first type of segment, each segment classified as the first type containing a message start”. Claim 1 further recites “wherein a segment of the successive segments having both the start and the end of the digital message is classified as the fourth type of segment”. This clause makes clear a segment containing a message start may be classified as the fourth type of segment provided the segment has both the start and the end of the message. Accordingly, claim 1, as amended, is not indefinite and the rejection under 35 U.S.C. §112 should be withdrawn. Claim 2, 3 and 8 are rejected based on their dependency from claim 1, and the rejection under 35 U.S.C. §112 should be withdrawn for at least the same reason.

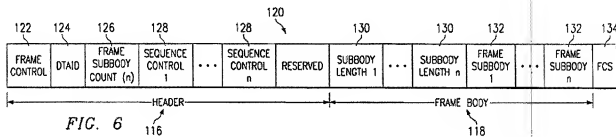
Claim 4 also recites five types of segments. Each segment type is recited with a characteristic, but the claim does not require all segments having the characteristic be classified as that segment type. For example, while claim 4 recites the segment type “segment containing a message start”, claim 4 also recites “a segment of the successive segments having both the start and the end of the digital message is classified as a message end segment”. The later limitation merely modifies or provides an exception to the former limitation. It does not render the claim indefinite. Accordingly, claim 4, as amended, is not indefinite, and the rejection under 35 U.S.C. §112 should be withdrawn. Claim 6 and 7 are rejected based on their dependency from claim 4, and the rejection under 35 U.S.C. §112 should be withdrawn for at least the same reason.

Rejections Under 35 U.S.C. §103

Claims 9 and 11-20 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Nexus 5001 Forum, “Standard for a Global Embedded Processor Debug Interface” (hereinafter Nexis) in view of Ho et al., U.S. Patent Publication No. 2003/0169769 (hereinafter Ho) and Petersen et al., U.S. Patent No. 5,882,321 (hereinafter Petersen). Applicant understands the Examiner is making two separate rejections – one with respect to a combination of Nexis and Ho, and another with respect to Nexis and Petersen.

Rejection of Independent Claim 9 based on Nexis in view of Ho

Ho describes an aggregation technique that aggregates MAC service data units (MSDUs) into a single transmission frame (§ 40). The aggregation frame makes more efficient use of a wireless communications medium by reducing the relative increasing the relative proportion of data being transmitted with respect to header information (§ 40). Ho's aggregation frame 120 from FIG. 6 is reproduced below.



Aggregation frame 120 includes header 116 and a frame body 118 portions. Frame body 118 has frame subbody fields 132. Each MSDU is held in one or more frame subbody fields 132. If an MSDU is to be transmitted in more than one frame subbodies, the MSDU is divided into ordered fragments which are placed in respective frame subbody fields 132. Each frame subbody field 132 also has an associated sequence control field 128 stored in the header 116 (§ 44). Each sequence control field 128 identifies the sequence number of the MSDU stored in a corresponding frame subbody field 132 and the frame subbody's "fragment number" (§ 44). If the entire MSDU is in the corresponding frame subbody field, the fragment number is "0" (§ 44). If the MSDU is fragmented into multiple frame subbodies, the fragment number indicates which of the fragments is in the corresponding frame subbody (§ 44).

Claim 9, as amended, recites "each segment containing a message end is classified as a message end segment". Nexis clearly does not meet this limitation as according to the IEEE-ISTO-5001 standard a segment containing an entire message is classified as a message start (SM) segment. Ho also fails to meet this limitation. The Office Action asserts that the MSDU in Ho is equivalent to the recited "digital message", the fragment in Ho is equivalent to the recited "packet" and the frame subbody field in Ho is equivalent to the recited "segment". Further, the Office Action asserts that a fragment number of "0" indicates a "message end segment" and the incremental fragment numbers assigned to frame subbodies containing fragments of an MSDU indicate a "packet end segment". Ho only describes using "0" as the fragment number "if the

corresponding subbody field 132 contains an entire MSDU” (¶ 44). When an MSDU is divided into fragments, the last fragment is the end of the MSDU, but Ho clearly teaches the fragment would be assigned an incremental fragment number which, under the Examiners interpretation of Ho, indicates a “packet end segment”. By contrast, claim 9 recites “each segment containing a message end is classified as a message end segment”.

Accordingly, claim 9 distinguishes over the Nexis and Ho combination and this rejection under 35 U.S.C. §103 should be withdrawn.

Claims 10-20 depend from claim 9 and this rejection should be withdrawn for at least the same reasons.

Accordingly, withdrawal of this rejection is respectfully requested.

Rejection of Independent Claim 9 based on Nexis in view of Petersen

Petersen describes a protocol for transmitting telecommunication data within a telecommunication system (col. 1, lines 13-14). According to Petersen, user packets are segmented into a number of minicells (col. 3, lines 45-48). The minicells, in turn, are multiplexed into ATM cells and then transmitted (col. 1, lines 39-41). Each minicell includes a header which indicates whether it includes a first segment, middle segment, or last segment of a packet (col. 4, lines 21-24). If a packet is so short that it fits in a single minicell, the minicell is marked as a “last segment” (col. 4, lines 38-41).

Claim 9 recites “the first segment is classified as either an empty segment or a message end segment and the second segment is classified as a packet end segment.” The Office Action admits that Nexis fails to meet this limitation, but asserts the limitation is met by Petersen. Specifically, the Office Action asserts that a user packet in Petersen is equivalent to the recited “digital message”, the minicell in Petersen is equivalent to the recited “packet” and the ATM cell in Petersen is equivalent to the recited “segments”. Further, the Office Action asserts that an ATM cell can contain data of such a marked minicell where the minicell contains a whole user packet shows “a first segment is classified as a message end” as recited in claim 9. Applicant respectfully disagrees. In Petersen, it is the minicells that are classified or “marked” as first segment, middle segment or last segment. The ATM cells are not classified in this way. Accordingly, Petersen’s ATM cells, regardless of payload, cannot show “a first segment is

classified as a message end” let alone that “each segment containing a message end is classified as a message end segment” as recited in claim 9.

Accordingly, claim 9 distinguishes over the Nexis and Petersen combination and this rejection under 35 U.S.C. §103 should be withdrawn.

Claims 10-20 depend from claim 9 and this rejection should be withdrawn for at least the same reasons.

Accordingly, withdrawal of this rejection is respectfully requested.

General Comments on Dependent Claims

Because each of the dependent claims depends from a base claim that is believed to be in condition for allowance, Applicants believe that it is unnecessary at this time to argue the further distinguishing features of all of the dependent claims. However, Applicants do not necessarily concur with the interpretation of the dependent claims as set forth in the Office Action, nor do Applicants concur that the basis for the rejection of any of the dependent claims is proper. Therefore, Applicants reserve the right to specifically address in the future the further patentability of the dependent claims not specifically addressed herein.

CONCLUSION

In view of the foregoing amendments and remarks, this application should now be in condition for allowance. A notice to this effect is respectfully requested. If the Examiner believes, after this amendment, that the application is not in condition for allowance, the Examiner is requested to call the Applicants' representative at the telephone number indicated below to discuss any outstanding issues relating to the allowability of the application.

If this response is not considered timely filed and if a request for an extension of time is otherwise absent, Applicants hereby request any necessary extension of time. If there is a fee occasioned by this response, including an extension fee, that is not covered by an enclosed check, please charge any deficiency to Deposit Account No. 23/2825 under Docket No. S1022.81220US00 from which the undersigned is authorized to draw.

Dated: January 5, 2010

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